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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/697,699	10/31/2003	Chandrakant D. Patel	100111090-4	9828

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EXAMINER

NORMAN, MARC E

ART UNIT PAPER NUMBER

3744

DATE MAILED: 05/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/697,699

Applicant(s)

PATEL ET AL.

Examiner

Marc E. Norman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,5,9-11,16,18,19,21,24 and 30-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5,9-11,18,19,21,24,30-33 and 37-41 is/are rejected.
- 7) ☒ Claim(s) 16 and 34-36 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>10/31/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 2, 18, 24, 30, 31, and 39 are rejected under 35 U.S.C. 102(e) as being anticipated by Stahl et al.

As per claims 1 and 39, Stahl et al. discloses a method for cooling a computer room comprising providing a plurality of heat exchangers at various locations in the room (each interface of fans 130 and heat exchange path 110 represent a functional heat exchange unit) including fans 130 configured to deliver air to respective locations in the room; supplying the heat exchangers with cooling fluid (via path 110), cooling the air through fans 130 with the cooling fluid in path 130; and controlling the temperature of the cooling fluid (column 3, lines 52-54) and air delivery based on sensed temperature/desired cooling capacity (column 3, line 66 – column 4, line 10).

As per claims 2, 18, and 30, Stahl et al. further discloses the coolant temperature being automatically controlled (column 3, lines 52-54; column 5, lines 43-45; claim 18).

As per claim 24, Stahl et al. discloses control of heat exchanger 110 (claim 18 of Stahl et al.).

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As per claim 31, Stahl et al. discloses controlling coolant flow rates (column 3, lines 52-54; column 5, lines 43-45).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 5, 9-11, 19, 32, 33, 37, 38, 40, and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stahl et al. in view of Nakanishi et al.

As per claims 5 and 9-11, Stahl et al. does not teach the controls being based on a predetermined range. Nakanishi et al. teaches a method of cooling a computer room wherein the controller determines if sensed temperatures are within a predetermined range (Abstract, lines 13-15). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine these features of Nakanishi et al to the system of Stahl et al. for the

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purpose of refining the control of temperature within the room, particularly since both references are directed to controlling the distribution of temperature within a computer room.

As per claims 19, 21, 32, 33, 37, 38, 40, and 41, while Stahl et al. does not specifically describe the arrangement temperature sensors in conjunction with the controller, it does disclose, for example, automatically varying the speed of the fans to provide desired cooling capacity. Nakanishi et al. teaches an air conditioner control circuit receiving condition information from the temperature sensors (see Figure 5; column 4, lines 10-30), independently controlling fan speed/air delivery, and memory (of PC 70) controlling fans and AC circuit (see Figure 5). It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply these features of the methodology of Nakanishi et al. to the system of Stahl et al. for the purpose of carrying out the automatic fan control according to cooling capacity as disclosed.

As per claims 36, Stahl et al. does not specifically show the air being recirculated from the room. However, air recirculation is common and well known in the art of air conditioning systems. Nakanishi et al. for example teaches receiving air from the room via duct 30. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine this feature of Nakanishi et al. with the system of Stahl et al. for the purpose of improving the efficiency of the system by recirculating air that has already been cooled.

Allowable Subject Matter

Claims 16 and 34-36 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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The following is a statement of reasons for the indication of allowable subject matter:

The prior art (and in particular the combination of Stahl et al. and Nakanishi et al.) does not teach the recited combination for controlling multiple heat exchanger units to control the temperature in a computer room wherein the cooling system manipulates the workload on the plurality of computer systems to optimize energy efficiency in cooling the plurality of computer systems.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc E. Norman whose telephone number is 703-305-2711. The examiner can normally be reached on Mon.-Fri., 8:00-5:30, with first Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Denise Esquivel can be reached on 703-308-2597. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MN



**MARC NORMAN
PRIMARY EXAMINER**